

CLAIMS

1. A disposable reactor (100) for culturing cells or microorganisms or for dissolving or suspending a powder
5 in a liquid medium, which comprises an outer envelope (101) and at least one inner envelope (102) which are made of plastic, these being placed in one another so as to define, on the one hand, inside said inner envelope, an inner compartment and, on the other hand,
10 between the inner and outer envelopes, at least one outer compartment, the compartments being intended to contain a liquid medium, said envelopes being closed in a sealed manner with respect to the external environment and communicating with one another, which
15 reactor is provided with means for injecting a pressurized gas into said inner compartment and means for removing said gas from said outer compartment in order to stir the liquid medium by making it flow between said compartments.

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2. The reactor (100) as claimed in claim 1, characterized in that each inner envelope has an opening (104) in its bottom and at least two lateral openings (105) capable of establishing communication
25 between the inner and outer compartments, the opening provided in the bottom of said inner envelope having a much greater cross section than that of said lateral openings.

30 3. The reactor (100) as claimed in either of claims 1 and 2, characterized in that it includes means for injecting a gas such as pure oxygen or else nitrogen into the inner compartment.

35 4. The reactor (100) as claimed in claim 3, characterized in that each inner envelope has a band of perforations (106) extending approximately transversely to the longitudinal direction of said envelope, said

perforations favoring transfer of the gas from one compartment to the other.

5. The reactor (100) as claimed in either of claims 3 and 4, characterized in that said gas injection means comprise a plastic nozzle connected in a sealed manner to said inner envelope so that one of its ends emerges in the inner compartment, the other end emerging outside said reactor.

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6. The reactor (100) as claimed in one of claims 1 to 5, characterized in that said gas injection and discharge means comprise plastic nozzles (103, 103') connected in a sealed manner to said inner and outer envelopes respectively, so that one of their ends emerges in one of said inner and outer compartments, the other end emerging outside said reactor.

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7. The reactor (100) as claimed in claim 6, characterized in that the injection of pressurized gas and of pure oxygen into said inner compartment takes place via the same nozzle (103).

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8. The reactor (100) as claimed in one of the preceding claims, characterized in that it includes at least one plastic pipe (108) which is connected in a sealed manner to said outer envelope and emerges at one end in the bottom of the outer compartment and at the other end outside the reactor, in order to introduce a measurement probe.

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9. The reactor (100) as claimed in one of the preceding claims, characterized in that it includes at least one vortex tube which is connected in a sealed manner to said outer envelope and emerges at one end in the bottom of the outer compartment and at the other end outside the reactor, in order to regulate the temperature of the liquid medium.

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10. The reactor (100) as claimed in one of the claims 5 to 9, characterized in that each gas inlet and outlet is provided with an absolute filter.

5 11. The reactor (100) as claimed in one of the preceding claims, characterized in that said outer envelope has, laterally, a tap-off (107) for introducing the culture medium into said compartments.

10 12. The reactor (100) as claimed in one of the preceding claims, characterized in that said outer and inner envelopes are made of a flexible material.

15 13. The reactor (100) as claimed in claim 12, characterized in that said envelopes are made of a flexible polyvinyl chloride film.

20 14. The reactor (100) as claimed in claim 12, characterized in that said envelopes are made of a polyurethane film.

25 15. The reactor (100) as claimed in one of the preceding claims, characterized in that it includes a sampling bag made of a flexible plastic material and connected in a sealed manner to said outer envelope so that it communicates with the outer compartment in order that, with the liquid medium being stirred, part of the latter is poured out into said sampling bag.

30 16. The reactor (100) as claimed in one of claims 12 to 15, characterized in that the inner and outer envelopes (102, 101) are suspended in a rigid retaining tank.